

REMARKS/ARGUMENTS

Status of the Application

Upon entry of this response, claims 1, 8, 14, and 15 will have been amended, claims 1-20 remain pending in this case, and claims 1-20 are rejected. According to the Detailed Action, claims 1, 2, 4-6, 8, 9, 12-17, 19, and 20 stand rejected under 35 U.S.C. §103 (a) as being allegedly unpatentable over United States Patent No. 5,777,621 (*Schneider et al.*) in view of United States Patent 6,266,053 (*French et al.*). Claims 3, 7, 10, 11, and 18 stand rejected under 35 U.S.C. § 103 (a) as being allegedly unpatentable over *Schneider et al.*, in view of *French et al.*, in further view of “Interactive Multi-Pass Programmable Shading” (ACM 200) (*Peercy et al.*).

In view of the foregoing amendments and following remarks, Applicant respectfully requests reconsideration of the present application and an early Notice of Allowance.

Summary of the Invention

The present invention provides systems and methods for representing a scene in a graphics environment. In an illustrative implementation, the methods include providing higher-level appearance description of an appearance of geometry in a retained-mode representation. The method also includes traversing the retained-mode representation to provide a final representation that can be rendered by a graphics pipeline. In operation, a first higher-level description of created from which a an action on the scene graph is requested to be performed. Upon such request, a traversal of a prior appearance description if performed to create a new higher-level description. The scene is then rendered using the new appearance description.

Objected to Claims

Claim 14 stands objected to for lacking a clearer recitation of the generic function/operation of the trademarked OpenGL® graphics system interface. Applicants have amended claim 14 to provide a clearer recitation in accordance with the Examiner's suggestions.

35 U.S.C. § 103(a) Rejections

Prima Facie Obviousness

To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Further, there must be a reasonable expectation of success after combining the references the intended purpose of the invention is realized. Lastly, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that a prima facie case of obviousness has not been made for claims 1-20 of the present application.

Schneider et al. in view of French et al.

The Examiner has rejected claims 1, 2, 4-6, 8, 9, 12-17, 19, and 20 as being allegedly unpatentable over *Schneider et al.* in view of *French et al.*

Schneider et al. teach a graphics rendering system that includes a continuum of quality control data groups each of which contains a plurality of quality control type variables. Each of the type variables contains a value which selects among a plurality of options in a respective trade-off between rendering quality and rendering speed. Each of the quality control data groups may be associated with the respective quality index which allows an application to select a point on the overall rendering speed/quality rendering trade-off by selecting a quality control index value.

Comparatively, *French et al.* teach a technique for representing a visual scene as a directed acyclic graph of data and operations that generates a sequence of image frames over specified time intervals. The graph specifies temporal and spatial values for associated visual elements of the scene. Time is modeled in the inheritance properties explicitly defined within the scene graph hierarchy by assigning temporal attributes to each media element. When evaluating the appearance or behavior of the scene and in particular the global time values of particular elements at a given time instant, the graph is traversed in a downward direction from roots to nodes causing temporal transformations specified along the branches of the graph to modify time parameters of the scene data at the nodes.

In contrast to claims 1, 2, 4-6, 8, 9, 12-17, 19, and 20 of the present application, neither *Schneider et al.* nor *French et al.*, alone, or in combination teach ***the creation of a higher-level appearance description of an appearance geometry in a retained-mode representation, wherein the higher-level appearance description is created using a first appearance description and traversing the retained-mode representation to provide a final representation that can be rendered by a graphics pipeline.*** (See claims 1, 8, and 15).

As *Schneider et al.* and *French et al.*, alone or in combination, fail to teach *all* of the limitations of independent claims 1, 8, and 15, they fail to support *aprima facie* case of obviousness as suggested by the Examiner.

Inasmuch as dependent claims 2, 4-6, 9, 12-14, 16-17, 19, and 20, depend from independent claims 1, 8, or 15, they too patentably define of the art of record for the same reasons. Accordingly, Applicants respectfully that the rejection with regards to claims 1, 2, 4-6, 8, 9, 12-17, 19, and 20.

Schneider et al. in view of French et al., further in view of Peercy et al.

The Examiner has rejected claims 3, 7, 10, 11, and 18 as being allegedly unpatentable over *Schneider et al.* in view of *French et al.*, and in further view of *Peercy et al.*.

As noted above, *Schneider et al.* teach a graphics rendering system that includes a continuum of quality control data groups each of which contains a plurality of quality control type variables. Comparatively, *French et al.* teach a technique for representing a visual scene as a directed acyclic graph of data and operations that generates a sequence of image frames over specified time intervals.

Furthermore, *Peercy et al.* teach interactive programmable shading using a scene graph library operating on top of OPENGL ®. In operation, the OPENGL ® architecture is treated as a general simple instruction multiple data (SIMD) computer and translate the high level shading description into OPENGL ® rendering passes.

In contrast to claims 3, 7, 10, 11, and 18 of the present application, neither *Schneider et al.* nor *French et al.* nor *Peercy et al.*, alone, or in combination teach ***the creation of a higher-level appearance description of an appearance geometry in a retained-mode***

DOCKET NO.: MSFT-0992 (191789.1)
Application No.: 09/832,138
Office Action Dated: April 18, 2003

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representation, wherein the higher-level appearance description is created using a first appearance description and traversing the retained-mode representation to provide a final representation that can be rendered by a graphics pipeline. (See claims 1, 8, and 15).

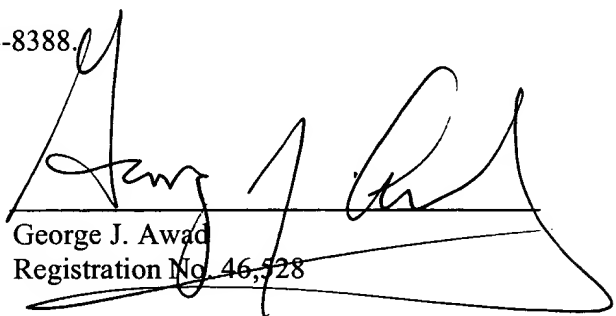
As *Schneider et al.*, *French et al.*, and *Peercy et al.*, alone or in combination, fail to teach *all* of the limitations of independent claims 1, 8, and 15, they fail to support *prima facie* case of obviousness as suggested by the Examiner.

Inasmuch as dependent claims 3, 7, 10, 11, and 18, depend from independent claims 1, 8, or 15, they too patentably define of the art of record for the same reasons. Accordingly, Applicants respectfully that the rejection with regards to claims 3, 7, 10, 11, and 18.

CONCLUSION

For all the foregoing reasons, Applicants respectfully submit that claims 1-20 patentably define over the prior art of record. Reconsideration of the present Office Action and an early Notice of Allowance are respectfully requested. If the Examiner believes a telephone conference would be useful in moving the case forward, the Examiner is encouraged to contact the undersigned at (215) 564-8388.

Date: October 16, 2003



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